

Transmitter for temperature, head mounting for Pt100

2-wire technology, SIEMENS Sitrans TH100

Type series PA210.



Application area

- all process industry field

Features

- Digital programmable transmitter
- Suitable for installation in connecting heads in accordance with DIN, form B
- Input for resistance thermometer
- Output signal: 4...20 mA invertible, 2-wire technology
- Programmable output signal for sensor breakage and sensor short circuit
- Power supply:
 - 8...35 V DC
 - 8...30 V DC (Ex)

Options

- Approvals/Certificates
 - Explosion protection for gases and dust
- Parameterization via PC Software

Application

The digital transmitter converts a temperature-dependent change in resistance into a current signal typical to process control systems. Likewise, linear changes in resistance, e.g. by valves or level transmitters can be converted into an analog current signal. An extensive range of configuration options is available.

Technical data

Constructional design

Dimensions:	see dimensional drawing, molded plastic
Degree of protection per EN 60529:	■ case IP 40 ■ Terminals IP 00
Weight:	50 g (0.11 lb)

Input

Resistance thermometer

Measured variable:	temperature
Sensor type :	Pt100 per EN 60751
Characteristic curve:	temperature-linear
Type of connection:	2-, 3- or 4-wire technology
Resolution:	14 bit
Measuring accuracy:	Span <250 °C (450 °F): < 0.25 °C (0.45 °F) Span >250 °C (450 °F): < 0.1 % of span
Repeatability:	< 0.1 °C (0.18 °F)
Measuring current :	approx. 0.4 mA
Measuring cycle:	< 0.7 s
Measuring range:	-200...+850 °C (-328 ... +1562 °F)
Measuring span :	25...1050 °C (77 ... 1922 °F)
Unit:	°C or °F
Offset:	programmable: -100 ... +100 °C (-180 ... +180 °F)
Line resistance:	max. 20 Ω (total from feeder and return conductor)
Noise rejection:	50 and 60 Hz

Output

Output signal:	4 ... 20 mA, 2-wire technology
Auxiliary power:	8.5 ... 36 V DC
Max. load:	$(U_{aux} - 8,5 V)/0,023 A$
Overrange:	3.6 ... 23 mA, infinitely adjustable (default range: 3.84 ... 20.5 mA)
Error signal:	(following sensor fault) 3.6 ... 23 mA, infinitely adjustable (default value: 22.8 mA)
Damping time:	0 ... 30 s (default value: 0 s)
Protection:	against reversed polarity
Resolution:	12 bit

Accuracy:	at 23 °C (73.4 °F) < 0.1 % of span
Temperature effect:	< 0.1 %/10 °C (0.1 %/18 °F)
Effect of auxiliary power:	< 0.01 % of span/V
Effect of load impedance:	< 0.025 % of max. span/100 Ω
Long-term drift:	■ < 0.025 % of the max. span in the first month ■ < 0.035 % of the max. span after one year ■ < 0.05 % of the max. span after 5 years

Temperature ranges and ambient conditions

Ambient:	-40...+85 °C (-40...+185 °F)
Storage:	-40...+85 °C (-40...+185 °F)
Relative humidity:	98 %, with condensation

Electromagnetic compatibility

According to:	EN 61326 and NAMUR NE21
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Certificates and Approvals

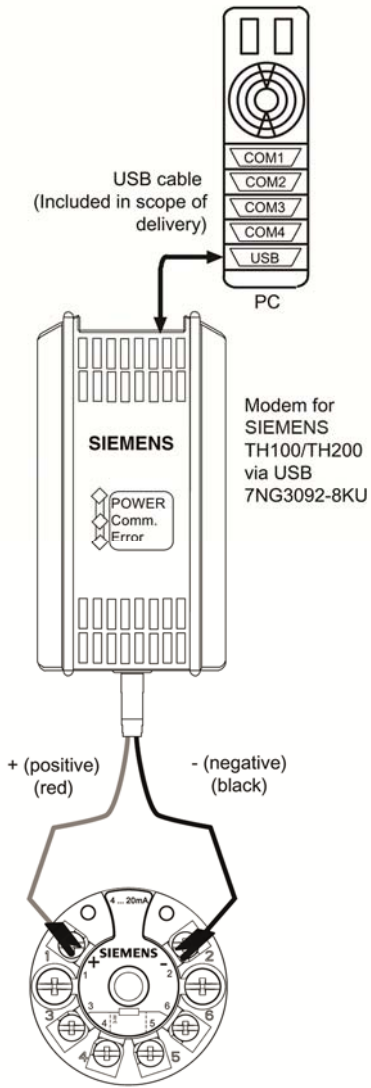
Explosion protection	ATEX SIEMENS Sitrans TH100
EC type test certificate:	PTB 05 ATEX 2049X
type of protection:	"Intrinsic gas safety" II 1G Ex ia IIC T6/T4 Ga II (1) 2G Ex ib [ia Ga] IIC T6/T4 Gb II (1) 3G Ex ic [ia Ga] IIC T6/T4 Gc II 3G Ex ic IIC T6/T4 Gc
type of protection:	"Non-sparking" II 3G Ex nA IIC T6/T4 Gc II 3G Ex nA[ic] IIC T6/T4 Gc
type of protection:	"Intrinsic dust safety" II 1D Ex ia IIIC T115 °C Da

Software Requirements (SIPROM T)

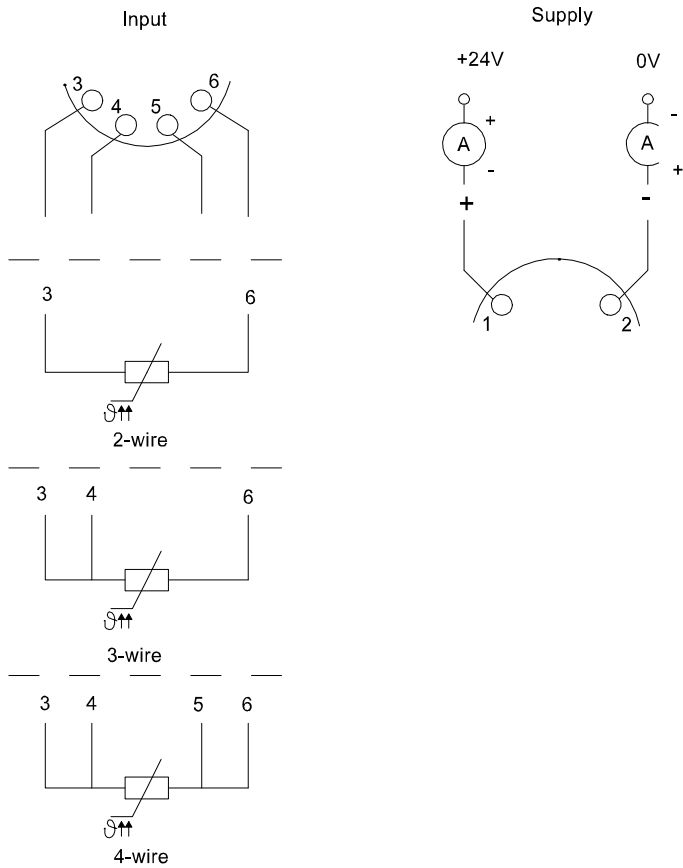
PC operating system:	Windows ME, 2000 and XP Windows 7 Windows 8
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Parameterisation

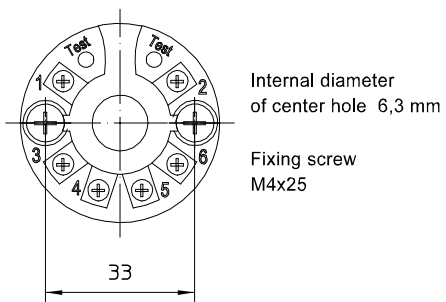
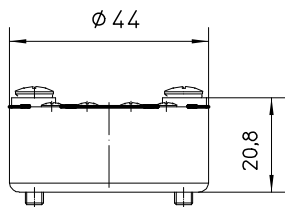
SIEMENS Sitrans TH100 USB-Modem.



Connection diagram



Dimensions



1(+) and 2(-) Supply
 3, 4, 5 and 6 Sensor connections (Pt100)

Order details

Transmitter for temperature, head mounting for Pt 100, SIEMENS Sitrans TH100 Type series PA210.

Order code PA210.			
PA2100		standard	
PA2101	design	Ex-protection, type of ex-protection as follows	
F11	standard range	input	Pt100 in 3-wire technology
		temperature range	0...100 °C
		error current (following sensor breakage)	22.8 mA
		sensor offset	0 °C
		damping	0.0 s
F12	custom-made configuratio	input	as per customers specificatio
		measuring range	
		error current (following sensor breakage)	
		sensor offset	
		damping	
H1	output signal	4...20 mA, 2-wire technology	

Additional features (to be indicated in case of need, only)		
S80	type of ex-protection (SIEMENS Sitrans TH100)	⊗ II 1G Ex ia IIC T6/T4 Ga
		⊗ II (1) 2G Ex ib [ia Ga] IIC T6/T4 Gb
		⊗ II (1) 3G Ex ic [ia Ga] IIC T6/T4 Gc
		⊗ II 3G Ex ic IIC T6/T4 Gc
		⊗ II 3G Ex nA IIC T6/T4 Gc
		⊗ II 3G Ex nA[ic] IIC T6/T4 Gc
		⊗ II 1D Ex ia IIIC T115 °C Da
Accessories		
MC1250	Programming set consisting of Software SIPROM T and modem with USB-port (PA2100 compatible to SIEMENS Sitrans TH100)	

Order code (example): PA2100 - F11 - H1